

What is claimed is:

1. A flat panel display comprising:  
a light emitting device; and  
at least two or more thin film transistors including semiconductor active layers having  
5 channel regions,  
wherein a thickness of the channel regions of the thin film transistors are different from  
each other.
2. The flat panel display of claim 1, wherein the thickness of the channel region of  
10 the thin film transistor which requires larger current mobility than that of the other thin film  
transistor, is thinner than that the thickness of the channel region of the other thin film transistor.
3. The flat panel display of claim 1, wherein the semiconductor active layer is  
formed using polycrystalline silicon, and a size of crystal grain on the channel region, which has  
15 a relatively thinner thickness, of the switching thin film transistor is larger than a size of the  
crystal grain on the channel region of the other thin film transistor.
4. The flat panel display of claim 3, wherein the polycrystalline silicon is formed in  
a crystallization method using a laser.

5. The flat panel display of claim 4, wherein the channel regions of the thin film transistors are formed by irradiating the laser to the regions simultaneously.

6. The flat panel display of claim 1, wherein the thin film transistors include a switching thin film transistor for transmitting a data signal to the light emitting device, and a driving thin film transistor for operating the right emitting device so that a predetermined current flows in the emitting device according to the data signal, and where the thickness of the channel region of the switching thin film transistor is thinner than the thickness of the channel region of the driving thin film transistor.

7. The flat panel display of claim 6, wherein the thickness of the channel region of the switching thin film transistor is about 300 to about 800Å.

8. The flat panel display of claim 6, wherein the thickness of the channel region of the driving thin film transistor is about 500 to about 1500Å.

9. The flat panel display of claim 6, wherein the semiconductor active layer is formed using a polycrystalline silicon, and a crystal grain on the channel region of the switching thin film transistor is larger than a crystal grain on the channel region of the driving thin film transistor.

10. The flat panel display of claim 9, wherein the polycrystalline silicon is formed in a crystallization method using a laser.

11. The flat panel display of claim 10, wherein the channel region of the switching  
5 thin film transistor and the channel region of the driving thin film transistor are formed by irradiating the laser to the regions simultaneously.

12. The flat panel display of claim 1, wherein the light emitting device is included in each of plurality of sub-pixels having at least two different colors, the thin film transistors  
10 include a driving thin film transistor connected between the sub-pixel and the light emitting device to supply the electric current to the emitting device, and the thickness of the channel regions of the driving thin film transistors are different for each of the colors of the sub-pixels.

13. The flat panel display of claim 12, wherein the thickness of the channel regions in  
15 the driving thin film transistors are decided to be in inverse proportion to the currents flowing on the sub-pixels.

14. The flat panel display of claim 12, wherein the thickness of the channel regions in the driving thin film transistors are decided to be in inverse proportion to the current mobility  
20 values of the channel regions of the sub-pixels.

15. The flat panel display of claim 12, wherein the sub-pixels respectively have red, green, and blue colors, and the thickness of the channel region on the driving thin film transistor of green sub-pixel is thicker than the thickness of the channel region on the red and blue sub-pixels.

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16. The flat panel display of claim 12, wherein the sub-pixels respectively have red, green, and blue colors, and the thickness of the channel region on the driving thin film transistor of the red sub-pixel is thinner than of the thickness of the channel region on the green and blue sub-pixels.

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17. The flat panel display of claim 12, wherein the sub-pixels respectively have red, green, and blue colors, and the thickness of the channel regions on the driving thin film transistors become thinner in order of green, blue, and red color sub-pixels.

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18. The flat panel display of claim 12, wherein the semiconductor active layer is formed using a polycrystalline silicon, and the sizes of crystal grains on the channel regions of the driving thin film transistors are different for each of the colors of sub-pixels.

19. The flat panel display of claim 18, wherein the sub-pixels respectively have red, green, and blue colors, and a crystal grain size on the channel region of the driving thin film

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transistor of green sub-pixel is smaller than a crystal grain size or the channel region of the red and blue sub-pixels.

20. The flat panel display of claim 18, wherein the sub-pixels respectively have red,  
5 green, and blue colors, and a crystal grain size on the channel region of the driving thin film transistor of red sub-pixel is larger than a crystal grain size on the channel region of the green and blue sub-pixels.

21. The flat panel display of claim 18, wherein the sub-pixels respectively have red,  
10 green, and blue colors, and a crystal grain sizes on the channel regions of the driving thin film transistors become larger in order of green, blue, and red sub-pixels.

22. The flat panel display of claim 18, wherein the semiconductor active layer is  
formed using the polycrystalline silicon, and the polycrystalline silicon is formed in a  
15 crystallization method using a laser.

23. The flat panel display of claim 22, wherein the channel regions of the sub-pixels  
are formed by irradiating the laser to the regions simultaneously.

24. The flat panel display of claim 1, further comprising a pixel area including a plurality of light emitting devices, and a circuit area controlling a signal applied to the pixel area, wherein the thin film transistor includes a pixel unit thin film transistor, which is located on the pixel area, and a circuit unit thin film transistor, which is located on the circuit area, and the thickness of the channel area of the circuit unit thin film transistor is thinner than the thickness of the channel area of the pixel unit thin film transistor.

25. The flat panel display of claim 24, wherein the thickness of the channel region of the circuit unit thin film transistor is thinner than that the thickness of the channel area of the driving thin film transistor, which operates the emitting device by making a predetermined current flow on the emitting device according to the data signal, in the circuit unit thin film transistors.

26. The flat panel display of claim 24, wherein the thickness of the channel region of the pixel unit thin film transistor is about 300 to about 800Å.

27. The flat panel display of claim 24, wherein the thickness of the channel region of the circuit unit thin film transistor is about 500 to about 1500Å.

28. The flat panel display of claim 24, wherein the semiconductor active layer is formed using a polycrystalline silicon, and a size of the crystal grain on the channel region of the circuit unit thin film transistor is larger than a size of the crystal grain on a channel region of the pixel unit thin film transistor.

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29. The flat panel display of claim 28, wherein the size of the crystal grain on the channel region of the circuit unit thin film transistor is larger than of the size of the crystal grain on the channel region of the driving thin film transistor, which operates the emitting device by making a predetermined current flow on the emitting device according to the data signal, in the circuit unit thin film transistors.

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30. The flat panel display of claim 28, wherein the polycrystalline silicon is formed in a crystallization method using a laser.

31. The flat panel display of claim 28, wherein the channel region of the circuit unit thin film transistor and the channel region of the pixel unit thin film transistor are formed by irradiating the laser to the regions simultaneously.

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32. The flat panel display of claim 1, wherein the thin film transistor is a complementary metal oxide semiconductor (CMOS) thin film transistor including a P type thin

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film transistor and N type thin film transistor, and a thickness of the channel region of the P type thin film transistor is thinner than the thickness of the channel region of the N type thin film transistor.

5            33.     The flat panel display of claim 32, wherein the thickness of the channel region of the P type thin film transistor is about 300 to about 800Å.

             34.     The flat panel display of claim 32, wherein the thickness of the channel region of the N type thin film transistor is about 500 to about 1500Å.

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             35.     The flat panel display of claim 32, wherein the semiconductor active layer is formed using a polycrystalline silicon, and a size of crystal grain on the channel region of the P type thin film transistor is larger than a size of crystal grain on the channel region of the N type thin film transistor.

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             36.     The flat panel display of claim 35, wherein the polycrystalline silicon is formed in a crystallization method using laser.



37. The flat panel display of claim 36, wherein the channel region of the P type thin film transistor and the channel region of the N type thin film transistor are formed by irradiating the laser to the regions simultaneously.